B.S. in Biomedical Engineering

Catalog Year 2026-27

Below is the *advised sequence* of courses for this degree program on Main Campus as of Jan 2026.

Official degree requirements and course prerequisites are in the University General Catalog; prerequisites are subject to change.

Course Number and Title	Units	Prerequisites/Enrollment Requirements
1st Semester		
MATH 122A/B or MATH 125 Calculus I with Applications	5/3	Appropriate Math Placement
*CHEM 151 Chemical Thinking I or CHEM 161/163	4	Appropriate Math Placement
WRIT 101 or 107 or 109H First-Year Composition	3	
ENGR 102A/B Introduction to Engineering or ENGR 102	3	ENGR102A & 102B: Pre- or Co-requisite of MATH 112 or higher; First-Year Status; College of Engineering Major; must not have taken ENGR102
UNIV 101 Intro to the General Education Experience	1	
Semester Total	**14**/16	
2nd Semester		
MATH 129 Calculus II	3	MATH 122B or 125 with C or higher
*CHEM 152 Chemical Thinking II or CHEM 162/164	4	CHEM 151 or 141/143 or 161/163 and Appropriate Math Placement
*PHYS 141 Introductory Mechanics or PHYS 161H	4	MATH 122B, 125 or Appropriate Math Placement Level
WRIT 102 or 108 First-Year Composition	3	ENGL 101 or ENGL 107
BME 295C Challenges in Biomedical Engineering (Spring only)	1	
General Education: Exploring Perspectives (Artist)	3	
Semester Total	**18**	
3rd Semester		
PSIO 201 Human Anatomy & Physiology 1	4	Department Consent
MATH 223 Vector Calculus	4	MATH 129 with C or higher
MCB 181 R Introductory Biology I and MCB 181 L Introductory Biology Laboratory I	3 1	Appropriate Math Placement
BME 225 Intro to Computer Programming for Biomedical Engineering (Fall Only) or ECE 101 Programming 1	**3**/4	BME 225: CHEM 151 or 141/143 or 161/163, MATH 122B or 125; ECE 101: MATH 112, 120R, 122B or 125 or placement at the level of MATH 120R
Semester Total	**15**/16	
4th Semester		
BME 210 Intermediate Engineering Design: Electronics, Mechanisms, Controllers (Spring only)	3	BME majors only. BME 225 or ECE 101
MATH 254 Intro to Ordinary Differential Equations	3	MATH 129 or 223 with C or higher
PHYS 241 Introductory Electricity and Magnetism or PHYS 261H	4	PHYS 241 or 261H: PHYS 141 or 140 or 161H; MATH 129 or Appropriate Math Placement Level
BME 214 Introduction Biomechanics (Spring only) or CE 214 Statics	3	For both: PHYS 141 or 161H; MATH 129
General Education: Exploring Perspectives (Humanist)	3	
Semester Total	**16**	

*Each of the following foundational science courses satisfies the requirements for General Education: Exploring Perspectives (Natural Scientist): CHEM 151 or 152 or 161 or 162; or PHYS 141 or 161H.

Advanced Standing is required for 300- and 400-level engineering courses (see your academic advisor for details).		
Course Number and Title	**Units**	**Comments**
5th Semester		
BME 447 Sensors and Controls (Fall only)	3	
PSIO 202 Human Anatomy and Physiology II **or** ECOL 182 R/L Introductory Biology II and Laboratory	4	
BME 376 Biomedical Statistics (Fall only)	3	
MATH 481 Mathematical Modeling of Fluid Flow Through & Around Organs and Organisms **or** BME 331 Introduction to Fluid Mechanics	3	
General Education: Exploring Perspectives (Social Scientist)	3	
Semester Total	**16**	
6th Semester		
BME 330 Biomedical Instrumentation (Spring Only)	4	
AME 301 Engineering Analysis or MATH 322 Mathematical Analysis for Engineers	3	
BME 480 Translational Biomedical Engineering (Spring only)	3	
BME 310 Medical Device Design (Spring only)	4	
†General Education: Building Connections	3	
Semester Total	**17**	
7th Semester		
ENGR 498A Interdisciplinary Capstone	3	Senior Status
BME 497G Clinical Rotation (Fall Only)	1	
BME Technical Elective	3	9 or more units of BME Tech Elective, consult major advisor for course approval
BME Technical Elective	3	9 or more units of BME Tech Elective, consult major advisor for course approval
**Technical Elective	3	Consult major advisor for course approval
†General Education: Building Connections	3	
Semester Total	**16**	
8th Semester		
ENGR 498B Interdisciplinary Capstone	3	Senior Status
BME Technical Elective	3	9 or more units of BME Tech Elective, consult major advisor for course approval
**Technical Elective	3	Consult major advisor for course approval
**Technical Elective	3	Dependent on selection of General Education course, consult major advisor for course approval
†General Education: Building Connections	3	
UNIV 301 General Education Portfolio	1	
Semester Total	**16**	

†Students should work closely with their academic advisor to select General Education: Building Connections courses; some course work in the major, such as some Technical Elective courses, may also fulfill General Education: Building Connections requirements.

**Technical Electives: three units of Engineering Technical Electives and 9 units of Technical Electives in consultation with an advisor for a total of 21 units.